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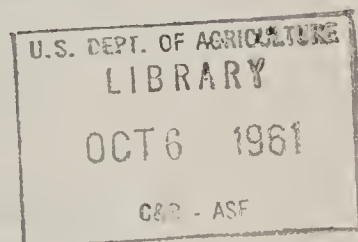
August 1959  
Letter No. 22

Telephone Engineering Information

These information letters are intended to provide a means for answering questions that arise in the field and to inform the field of new developments. They are not intended to be instructions nor to replace in any respect the presently approved channels for establishing requirements and procedures.

TE and CM Sections Recently Distributed

Rev. Section 102, Numerical Index  
Rev. Section 210, Telephone System Design Criteria  
Add. Section 810, Central Office Protection  
Rev. Section 821, Multipair Distribution Wire Protection



TE and CM Sections Now Being Printed

Rev. Section 622, Subscriber Loop Transmission Calculations  
Add. Section 690, Joint Use of Poles (for Cable)

Stromberg-Carlson Transistorized Trunk Carrier

A field trial of Stromberg-Carlson's Type 565, five channel transistorized trunk carrier, began June 8, 1959, in the service of the Merchants' and Farmers' Telephone Company, between Montpelier and Beaver Dam, Virginia. This is the first all-transistor trunk carrier in REA borrowers' service. It operates off the central office storage battery. To date it has given no trouble.

Drop Wire Clearances on Buildings

A question has been raised in connection with Table III, Minimum Clearances for Drop Wire on Buildings and Clearances for Station Wiring On and In Buildings, in the latest REA TE & CM-701, "Station Installations," and on Page g22 of the latest Form 511, "Outside Plant Construction Contract." The question concerns the minimum clearance requirements of two inches for drop wire from "All other ground conductors." As the table heading states, separation is required only for "Drop Wire," which is an unshielded wire, to prevent flashover from the drop wire to the ground wire. In the case of buried plant where buried distribution wire (armor-shielded) is used for either aerial or buried services, no separation is

required as REA specifications require grounding of the shield so that ground wires and the shield remain at the same potential.

It is suggested that a note be added to your copies of TE & CM-701, "Station Installations," and Form 511, "Telephone System Construction Contract," indicated by an asterisk after "All other ground conductors,"\* to read something like the following: "This separation requirement applies to aerial drop wire. It does not apply to buried distribution wire used for aerial and buried services from buried plant. No separation is specified in service application of buried distribution wire."

#### Mounting of Ready-Access Enclosures Used for Terminals

Some questions seem to remain on standards for installing ready-access enclosures especially when used to mount terminal blocks.

1. What is the preferred position of the ready-access enclosure for terminal and loading use?

The ready-access enclosure should be mounted to the right of the pole when the installer is facing the side of the pole on which the cable is attached.

2. How should the odd and even sides of the ready-access enclosure be faced?

When the case is placed in the preferred position indicated above, the odd side should face the installer with the odd number sequence reading from left to right.

3. Should even numbered cable pairs be terminated on even numbered terminal lug pairs and odd numbered cable pairs be terminated on odd numbered lug pairs?

No. This would eliminate full utilization of the terminals. Cable pairs assigned by the engineer should be terminated in rotation without regard to matching even numbered cable pairs with even numbered lug pairs. In operations, after cutover, no sequence or matching need be attempted.

#### COE Specifications Regarding Howlers

Some difficulty has been experienced in acceptance testing of howlers because of the exclusive use of 500 type telephone sets. Paragraph 2.444 of REA TE & CM-325, "Application Guide for the Preparation of Detail Dial Central Office Equipment Requirements," may seem to discourage the inclusion of howlers for CDOs because



of the statement that the effectiveness of the howler has been greatly reduced since the advent of the 500 type set. Because of the varistor in the 500 set the output volume of the howler at the subscriber's end has been greatly reduced. Boosting the output voltage of the howler may burn the varistor and create a condition more serious than an occasional off-hook condition. However, enough output volume at the subscriber's end remains to maintain the value of howlers in maintenance work and they still appear to be a very practical operating tool, especially if the specifications call for a howler equipped with a customer-controlled relay which will restore the line to serviceable condition when the subscriber restores the receiver. This type is available in the Lorain Model B howler or equivalent.

#### Automatic Traffic Meter

The automatic traffic meter mentioned in Information Letter Issue No. 18, May 1958, is in successful field use. To date it has been used in six offices in the Dakotas and will soon be used to investigate the traffic capabilities of the Kellogg K-60 crossbar community dial office that was placed in service at Osage City, Kansas, in May of this year. It requires the service of an REA field engineer or technician to connect it to the trunks to be registered and to supervise it occasionally for the usual one-week period it is used in an exchange. The register readings are photographed automatically each hour by a movie camera. The films are sent to REA in Washington for development and reading. The meter is intended to illustrate the use of traffic measuring equipment. It can be used to measure the traffic on eleven groups of trunks for a maximum of twenty-four trunks per group. Temporary connection to each trunk sleeve circuit is made by alligator-type pinch connectors.

#### Plastic Insulated Conductor Color Code Standardization

REA recently sponsored in Washington, D. C., a one-day conference with color concentrate manufacturers, plastic manufacturers and representatives of the Insulated Power Cable Engineers Association (IPCEA) followed by a one-day conference with specification writers of the military and other Government agencies, the IPCEA, the Association of American Railroads and the telephone industry. The subject of the conferences was the standardization of colors for plastic insulated conductors. It was generally agreed that the "Munsell System" for specifying color and color tolerances should be adopted. This system designates colors by numbers. It employs three attributes of color which are hue (blue, green, red, etc.) value (lightness or darkness) and chroma (depth or saturation). The permissible variations from a desired color can be indicated on a chart. The REA specifications for color coded plastic insulated conductors are presently being revised to specify colors and color tolerances by the Munsell System.

Minor Changes in REA TE & CM-701 and Form 511

REA TE & CM Section 701, "Station Installations," includes a Table IV, Typical Fastening Devices for Station Wires and Station Ground Wires. Some minor errors appear on this table.

1. The overall diameter of the No. 22 station wire reads .100" and should read .160".
2. In the "Explanation" portion Items C1, C2, and C4 and C5 specify #8 screws. Some offset clamps will not accommodate the #8 screw and #6 screws should be substituted.
3. In the "Explanation" portion Items D1, D2 and D3 show the offset clamp capacity as 3/32" to 7/32". These should read 5/32" to 7/32". Number 6 screws can be substituted if desired.
4. Items D4, D5 and D6 show the clamp capacity as 1/4" to 7/32". These should read 1/4" to 5/16". Number 6 screws can be substituted.
5. A #6 screw can be substituted for use in Item F2, if desired.

These changes will be made in the pocket-sized edition of the Station Installation Handbook to be issued soon, but in view of the fact that these minor errors are not serious, correction of these items in TE & CM-701 and Form 511 will be deferred until the next revisions thereof.